Safety Interlocks Group
FY07 Goals

The AES/Safety Interlocks Group is responsible for developing, implementing, and supporting primarily PLC-based interlock systems for personnel access control and equipment protection of the APS accelerators and beamlines, specifically ACIS, PSS, BLEPS and FEEPS. The mission of the group is focused on meeting five objectives:

1. **Implement and support interlock systems with high customer satisfaction. Then, maintain high availability and operational transparency of the installed systems.**
   - Meet or exceed assigned reliability and availability budget goals for the APS machine.
   - Develop beamline reliability and availability statistics for FY07 and improve on them in FY08
   - Install the remainder of 21ID Generation 3 PSS on schedule and on budget.
   - Install 4ID Generation 3 PSS upgrade on schedule and on budget.
   - If funded, begin upgrading the obsolete Generation1 GE PLC processors and code
   - Develop a skills qualification matrix for everyone in the group.
   - Provide oversight for all work performed on Radiation Safety Systems
   - If funded. replace the PSS LOVE controllers with analog PLC modules
   - Implement an action plan for PSS Generation 1 improvements based on the results of the Gen 1 review.
   - Review the state of the PSS drawing packages, update them and enter into ICMS
   - Review the beamline user requirement documents for accuracy and update them as needed
   - Continue upgrading the FEEP systems to the new standard. This includes new EPICS screens, drawings, documentation and training.
   - Develop an ACIS upgrade path.
   - Enter all ACIS drawings and procedures into ICMS
   - Assist Controls Group with the development and implementation of new EPICS screens for all G1 PS Systems.
   - If funded, develop a universal PSS/FEEPS/BLEPS simulator.
   - If funded, develop a Generation 3 mezzanine and station printed circuit board tester.
   - Design and Install the CNM Laser Safety Interlock System.
   - Promote practical QA initiatives within the group

2. **Integrate ICMS into the daily activities of the group.**
   - Become proficient using the ICMS system.
   - Utilize ICMS for all validation procedures.
   - Begin utilizing the ICMS approval workflows.

3. **Act as a resource for the APS facility and the community at large, primarily in the area of PLC-based interlock systems.**
   - Implement a strategy that will offer all users (beginning with the XOR CATs) the use of our resources to assist with the maintenance of their BLEP systems.
   - Provide support for the APS II Upgrade Project

4. **Develop a visibly outstanding technical workforce in engineered safety systems.**
   - Maintain an understanding not just of conventional engineering techniques, but also mandates and practices specific to engineered safety systems.
   - Maintain Safety Software Quality Assurance (SSQA) work process that is consistent with that stipulated in the DOE O 414.1C, ANL QAPP and in APS organizational QA procedures.
   - Continue enhancing and developing engineer's knowledge of PLCs through in-house and external training.
   - Develop expertise in the codes and regulations associated with engineered safety systems. Utilize cross-training to share knowledge.

5. **Stay proactive in the APS and AES safety culture.**
   - Achieve 100% compliance with web-based training requirements as defined by the ANL JHQs.
   - Integrate appropriate safety policies and procedures into all tasks and activities.